

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE**

PERSONALIZED USER MODEL, L.L.P.,)	
)	
Plaintiff,)	C.A. No. 09-525-LPS
)	
v.)	JURY TRIAL DEMANDED
)	
GOOGLE INC.,)	PUBLIC VERSION
)	
Defendant.)	

DEFENDANT GOOGLE'S RESPONSIVE BRIEF ON CLAIM CONSTRUCTION

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NOTE ON CITATIONS

1. U.S. Patent. No. 6,981,040 (the “‘040 patent”) is attached as Exhibit A to Google’s Opening Brief on Claim Construction. References to the patent-in-suit are indicated by the patent number, column and line number, or by claim number. A reference to “‘040:3:15” therefore means column 3, line 15 of the ‘040 patent.
2. U.S. Patent No. 7,685,276 (the “‘276 patent”) is attached as Exhibit B to Google’s Opening Brief on Claim Construction. References to the patent-in-suit are indicated as set forth above.
3. The prosecution history of U.S. Patent No. 6,981,040 is attached as Exhibit C to Google’s Opening Brief on Claim Construction.
4. Exhibits D-F are attached to Google’s Opening Brief on Claim Construction.
5. Appendices A-D are attached to Google’s Opening Brief on Claim Construction.
6. Additional exhibits are attached hereto as Exhibits G and H. The transcript of the deposition of Mr. Yochai Konig is attached as Exhibit G. References to Mr. Konig’s deposition testimony are indicated by “Konig” and then the page and line number.
7. Citations to Google’s Opening Brief on Claim Construction shall appear as “GOB,” and then the page cite.
8. Citations to Plaintiff’s Opening Brief on Claim Construction shall appear as “POB,” and then the page cite.
9. Citations to the Exhibits attached to the Declaration of Jennifer Bennett in Support of Plaintiff’s Opening Brief on Claim Construction shall appear as “Bennett Ex. ____.”

INTRODUCTION

When the parties met and conferred regarding which disputes to brief for the Court, plaintiff Personalized User Model (“PUM”) argued that the order of steps and antecedent basis terms did not need to be briefed at all. Yet, PUM’s Opening Brief leads with these two issues. It is not until the end of PUM’s brief that PUM addresses the terms that go to the heart of the invention, such as “User Model specific to the user” and “learning machine.” The very structure of PUM’s Opening Brief illustrates PUM’s attempt to avoid the supposed invention actually recited in the claims in the hopes of manufacturing an infringement case through claim construction. PUM’s omissions are also noteworthy. For example, PUM ignores the rejections and amendments made to the claims during prosecution, even though Google specifically told PUM when the parties met and conferred that PUM’s interpretation of “unseen document” was irreconcilable with the prosecution history.

In actuality, the intrinsic and extrinsic evidence, including much of the evidence on which PUM itself relies, supports Google’s proposed constructions. The recent deposition testimony of named inventor Yochai Konig, who is a partner in plaintiff Personalized User Model, also supports Google’s proposed constructions. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

Thus, as shown by PUM’s own brief and the testimony of an inventor and partner in PUM, Google’s constructions should be adopted, and PUM’s rejected.

ARGUMENT

I. USER MODEL SPECIFIC TO THE USER AND USER SPECIFIC LEARNING MACHINE.

<i>Term/Phrase</i>	<i>Google's Construction</i>	<i>Plaintiff's Construction</i>
User Model specific to the user ('040 patent, claims 1, 21, and 32)	model unique to the user, that is created and updated by the learning machine and stored in a data structure	an implementation of a learning machine updated in part by data specific to the user
User specific learning machine ('276 patent, claims 1, 5, and 23)	Learning machine unique to the user	a model and/or mathematical function that is used to make a prediction or intelligent decision that attempts to improve performance in part by altering the values/weights given to its variables depending upon past observations or experiences specific to the user

A. Google's Construction Properly Defines "User Model Specific to the User."

As Google demonstrated in its Opening Brief, the uniform disclosure in the patent shows that each individual user has a User Model that is specific to – i.e. unique to – that user, as Google's construction provides. (GOB, 9). PUM's own evidence shows Google's construction is correct. For example, PUM provides a definition of "specific" as "restricted by nature to a particular individual, situation, relation, or effect..." (POB, 21) (citing, *Webster's Third New International Dictionary* (Bennett Ex. 10 at 2187)) (emphasis added). Using PUM's definition, the User Model being "specific to the user," means it must be "restricted by nature to a particular individual," – i.e. the user. PUM also offers a definition of "unique" as "**1 a** : being the only one," "**2** : being without like or equal." (POB, 22) (citing Bennett Ex. 10 at 2500). This definition is also consistent with Google's construction that provides the User Model be unique to – i.e. being only for – the user.

PUM also cites the statement in the specification that "[t]he User Model 13 represents the user interest in a document independent of any specific user information need. This estimation is

unique to each user,” as supporting its argument that the model need not be unique to the user. (POB, 22 n.14 (citing ‘040:9:35-38)). But it shows just the opposite. In this statement, the “estimation” that is “unique to the user” is the “User Model,” which represents the user’s interest in a document.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] *Voice Tech. Group, Inc. v. VMC Sys., Inc.*, 164 F.3d 605, 615 (Fed. Cir. 1999) (an inventor is “a competent witness to explain the invention and what was intended to be conveyed by the specification and covered by the claims”).

B. PUM’s Construction Seeks to Avoid the User Model Being “Specific to User.”

PUM acknowledges that the “model needs to be ‘specific’ to the user.” (POB, 22) (emphasis added). Yet, its construction does not require the model be specific to the user. Rather, PUM’s construction, “an implementation of a learning machine updated in part from data specific to the user,” only requires that the model use “data specific to the user.” Thus, PUM’s interpretation, which is contrary to the acknowledged plain reading of the phrase, should be rejected out of hand.

PUM seeks to justify its construction by arguing the “specific to the user” language only requires the User Model “be associated with the specific user.” (POB, 22 n.14.) The “specific to” language, however, modifies the “User Model,” not the “user.” Thus, it is not enough that the model

be associated with a “specific user.” Rather, as PUM acknowledges, the model itself must be “specific to the user.” Further, even PUM’s proffered definition of “specific” requires a “restrict[ion] by nature to a particular individual,” not merely an “association” with an individual. (POB, 21.)

While PUM contends “the specification repeatedly describes the User Model as relating to and/or associated with a user,” PUM’s citations to the specification, which are not quoted or discussed in its brief, do not support PUM’s assertion. (POB, 22.) For example, one cite states “[t]he User Model represents the user’s information and product interests; all information that is presented to the user has been evaluated by the User Model to be of interest to the user.” (POB, 22, citing ‘040:7:31-34.) This quote says nothing about the User Model “relating to” or being “associated with a user.” (*See also* ‘040:8:29-32, cited by PUM: “[a]ll of the above features of Personal Web 12 are based on a User Model 13 that represents user interests in a document or product independently of any specific user information need, i.e., not related to a specific query”).) Another of PUM’s cites just states a User Model is initialized using “a set of documents associated with the user.” (POB, 22, citing ‘040:17:13-15.) And while the specification does contain “examples of updating the User Model based on data specific to the user” (POB, 22), none of these examples show the User Model is “specific to the user” merely by using the data specific to the user.

Further, under PUM’s construction, a model that uses data derived from specific users would be a “User Model specific to a user,” even if the same model was used for all users. However, such an interpretation is inconsistent with the “personalized” services of the patent provided through a User Model for “each user.” (See GOB, 9.) PUM’s construction is also inconsistent with the patent [REDACTED] a model in the patent which represents the interest level of a group of users, is a “Group Model,” not a user model. [REDACTED] As the specification states, the Group Model “is a function that represents the interest level of a group of users in a document . . .”

(‘040:9:47-50). Yet, under PUM’s construction, a Group Model could also be a “User Model specific to the user” because the model would use data from several “specific users” and be “related to or associated with” those “specific users.” This is PUM’s intent, as it is seeking to ensnare Google’s accused products that do not use models “specific to the user” as claimed in PUM’s patent. (See GOB, 10.) PUM’s attempt to manufacture an infringement argument through claim construction should be rejected.¹

C. Like a “User Model Specific to the User,” the “User Specific Learning Machine,” Is Properly Viewed as “Unique to the User.”

PUM agrees the dispute regarding the meaning of “user specific” in “user specific learning machine” is identical to the dispute regarding “User Model specific to the user.” (POB, 22.) And here too, although not reflected in PUM’s construction, PUM makes clear it intends to interpret “specific” in the disputed phrase to mean “related to or associated with,” stating “a user-specific learning machine is just that - a learning machine specific to (i.e., related to or associated with) the user.” (POB, 21)(emphasis added). As discussed above, there is no support for interpreting “specific” in this manner, and Google’s construction should be adopted.

D. Google’s Construction Properly Defines What a “User Model” Is.

PUM does not take issue with the language in Google’s construction, fully supported by the patent, that the User Model is “created and updated by the learning machine.”² (See POB, 22-23; GOB, 11). Rather, PUM suggests that Google’s construction is at odds with the specification

¹ In arguing that a user model need not be particular to one user, PUM seeks to depart even from its name, Personalized User Model.

² PUM’s argument that Google’s construction should be rejected because there has been “no disclaimer or disavowal of claim scope” is a non-starter. (POB, 22-23.) “User Model,” in first capital letters throughout the patent, is a coined term. Thus, the court is to “look to the specification to determine what [it] must do.” *MyMail, Ltd. v. Am. Online, Inc.*, 476 F.3d 1372, 1376 (Fed. Cir. 2007).

because it provides that the User Model is stored in a “data structure.” But, as PUM admits, the specification discusses storing components of the User Model solely in “data structures.” (POB, 22-23; *see also* ‘040:10:29-33, 17:13-15.) [REDACTED]

[REDACTED]; *see Voice Tech. Group*, 164 F.3d at 615. Google’s construction should be adopted.

II. LEARNING MACHINE.

<i>Term/Phrase</i>	<i>Google’s Construction</i>	<i>Plaintiff’s Construction</i>
learning machine (‘040 patent, claims 1 and 32; ‘276 patent, claims 1, 5 and 23).	program that contains parameters used to calculate a probability, and where the predictive ability of the program improves over time with the addition of new data	a model and/or mathematical function that is used to make a prediction or intelligent decision that attempts to improve performance in part by altering the values/weights given to its variables depending upon past observations or experiences.

A. A Learning Machine Estimates Probabilities; It Does Not Merely Make “Intelligent Decisions.”

PUM does not contest that a learning machine in the patents uses “parameters” and that the output of the learning machine is a “probability,” as Google’s construction provides. Rather, PUM acknowledges that the learning machine uses parameters to estimate a probability. (POB, 19-20.) Since the parties agree that the learning machine must use “parameters” to output a “probability,” both concepts are appropriately included in the construction of “learning machine” as Google’s construction provides, but PUM’s does not.⁴

³ The language that PUM points to stating that the User Model is “*independent* of a *specific representation* or *data structure*” (POB, 22 (emphasis in POB)), merely shows there is no particular type of data structure required, just as Google’s construction allows.

⁴ PUM argues that Google’s construction should be rejected because it provides that parameters are used to “calculate [rather than *estimate*] a probability.” (POB, 20) (emphasis in POB). Google addresses why “estimating” is appropriately construed as “calculating” in the section below regarding the “probability” phrases. (*See also* GOB, 16-17.)

On the other hand, PUM provides no support for the language in its construction that the learning machine makes predictions through estimating probabilities or by “intelligent decisions.” Other than its chart containing its proposed construction, the phrase “intelligent decision” never appears in PUM’s brief. Neither the phrase nor anything like it is used in the patent either. Rather, as PUM now concedes, the output of the learning machine is a probability. There is simply no support at all for PUM’s “intelligent decision” language.

B. Google’s Construction Appropriately Conveys the “Learning” of the Learning Machine.

PUM’s brief shows that Google’s phrasing of the learning ability of the learning machine is correct. Quoting the specification, PUM acknowledges that the invention uses “a learning machine that is *continually updated based on actions of the user and similar users.*” (POB, 19 (quoting ‘040:1:12-18) (emphasis in POB).) It is this “continuous” learning that makes the learning machine improve “over time” with the addition of new data, as Google’s construction provides.

PUM’s citations to the *Dictionary of Computer, Science, Engineering and Technology*, similarly support Google’s construction. The definition of “learning” is “generally, any scheme whereby *experience or past actions and reactions* are automatically used to change parameters in an *algorithm*,” and “machine learning” is defined as “the component of artificial intelligence that deals with the *algorithms that improve with experience.*” (POB, 19) (emphasis in POB). PUM’s citations show that the learning machine automatically improves with experience, as Google’s construction provides, not that it may sometimes seek to improve with experience, as PUM’s proposed constructions suggest.

Although not entirely clear, it appears that PUM argues the learning machine need not actually improve with the addition of new data, but rather need only attempt to improve. (POB, 20.) Google’s construction, however, is not inconsistent with this notion. If new data is identical to prior

data, such that the addition does not change anything in the learning machine, this would not be excluded from Google's construction. But, the learning machine must at least attempt to improve when updated because—as the parties appear to agree—the updating is continuous.

PUM also contends the language in Google's construction that the learning machine improves with “new data” does not capture the sources of information used to improve performance as well as PUM's “observations and experiences” language. (POB, 21). But PUM does not articulate why. Instead, PUM observes that “the specification is replete with examples of monitored user interactions that are used to estimate the parameters of the learning machine.” (*Id.*) While it is unclear how this supports PUM's position, to address the apparent concern, Google would agree to replace “new data” in its construction with “monitored user interactions.”

C. The Intrinsic and Extrinsic Evidence Shows a Learning Machine Is a “Program,” Not a “Model And/or Mathematical Function.”

PUM's evidence shows that a learning machine is a program, as Google's construction provides, not a model or mathematical function, as in PUM's construction. For example, in purported support for its “function” language, PUM cites the treatise *Learning from Data: Concepts, Theory, and Methods*, referenced in the patents-in-suit, which says “the learning machine is capable of implementing a set of *functions*.” (POB, 19) (emphasis in POB). But this shows the “learning machine” itself is not a “function,” it is what “implements” a function. Indeed, PUM's treatise also explains a “learning method” is “usually implemented in software”—i.e., a program. (Ex. I, xi) (emphasis added).

The only support PUM provides for its “model” language in its proposed construction is the statement in the specification that the “User Model 13, with its associated representations, is an implementation of a learning machine.” (POB, 19) (citing ‘040:8:43-44.) That the “User Model” may be an “implementation” of a learning machine, does not mean that a model is the same thing as

the learning machine. The claims plainly recite “User Model” and “learning machine” as separate limitations, and the applicants confirmed as much during prosecution: “There are three limitations here, ‘a learning machine,’ ‘parameters,’ and ‘a User Model.’ All three limitations, as well as the deterministic relationship among them . . . *must* be present in Breese for an anticipatory type of rejection to stand.” (Ex. C - 12/16/03 Remarks, PUM0067743) (emphasis in original). A patentee may not “adopt a position contradictory to that adopted before the PTO and expect to be believed.” *TorPham, Inc. v. Ranbaxy Pharms.*, 336 F.3d 1322, 1329 (Fed. Cir. 2003).

III. PARAMETERS OF A [USER SPECIFIC] LEARNING MACHINE

<i>Term/Phrase</i>	<i>Google’s Construction</i>	<i>Plaintiff’s Construction</i>
parameters of a [user specific] learning machine (‘040 patent, claims 1 and 32; (276 patent, claims 1, 5, and 23)	variables, having a value or weight, that are used by the [user specific] learning machine to calculate a probability	values or weights of the variables of a [user-specific] learning machine
estimating parameters of [user specific] a learning machine (‘040 patent, claims 1 and 32; ‘276 patent, claims 1, 5, and 23)	estimating a value or weight of each of the variables that are used by the [user specific] learning machine to calculate a probability	estimating values or weights of the variables of a [user-specific] learning machine

PUM concedes that “the specification states that parameters of a learning machine are used to estimate [] a probability.” (POB, 17) (citing ‘040:4:26-34.) PUM argues though that not all parameters are used to estimate probabilities. (*Id.*) But, PUM does not indicate what purpose a “parameter of a learning machine” has other than estimating a probability. Nor does it cite a single example of a parameter that would not be used to estimate probabilities—either from the patent or otherwise. As with its “intelligent decision” language in its “learning machine” construction, PUM is merely trying to achieve wiggle room in its infringement case to ensnare Google instrumentalities that do not use “learning machines,” or “parameters” thereof, as those terms are used in the patent.

PUM also again argues that Google’s construction should be rejected because there is no “disclaimer or disavowal,” and points to broad dictionary definitions of “parameter.” *Phillips*, however, explicitly rejects an approach where “recourse to the specification is limited to determining whether the specification excludes one of the meanings derived from the dictionary.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1320 (Fed. Cir. 2005). Instead, the specification, which PUM concedes supports Google’s construction, “is always highly relevant to the claim construction analysis” and “usually” is “dispositive.” *Id.* at 1315; *see also Praxair, Inc. v. ATMI, Inc.*, 543 F.3d 1306, 1324 (Fed. Cir. 2008).

PUM’s definition of parameter from the *Random House Unabridged Dictionary* does, however, support Google’s language that parameters are “variables, having a value or weight” The definition provides that a “parameter” is “a variable that must be given a specific value,” just as Google’s constructions provide. (POB, 17; Bennett Ex. 6, 1408.) [REDACTED]

[REDACTED]; *Voice Tech. Group*, 164 F.3d at 615. Google’s constructions that properly provide a parameter is a variable, with a value that is estimated, should be adopted.

IV. USER-SPECIFIC DATA FILES

<i>Term/Phrase</i>	<i>Google’s Construction</i>	<i>Plaintiff’s Construction</i>
user-specific data files (‘040 patent, claims 1, 32)	data files unique to the user	the monitored user interactions with data and a set of documents associated with the user

The plain language of this phrase requires “data files” that are “user-specific.” Google’s construction captures these concepts. First, Google’s “unique to the user” language provides the proper meaning for “user-specific” as shown above. (*See also* GOB, 14.) In contrast, PUM does not show how its construction gives meaning to the “user-specific” aspect of this phrase.

Further, the term “data files” is easily understood and needs no separate construction. Like any claim limitation, however, it does need to be given meaning. *Mangosoft, Inc. v. Oracle Corp.*, 2008 U.S. App. LEXIS 10356, at *15 (Fed. Cir. May 14, 2008) (rejecting proposed construction that “would effectively read the ‘local’ limitation out of the claim”). Yet, PUM proffers a construction in which “user-specific data files” need not actually be “files” at all. Thus, it is PUM’s construction, not Google’s, that would require a “disavowal or disclaimer of claim scope” to be correct.⁵ Nothing in the claims or specification, however, indicate that a “data file” need not be a “file.”

PUM also argues no construction is necessary because “user-specific data files” are defined in the claims. (POB, 12-13) (citing *Cheetah Omni, LLC v. Verizon Servs. Corp.*, 2010 WL 4510986, at *7 (E.D. Tex. 2010)). Initially, PUM is not arguing “no construction necessary” here. PUM admittedly seeks a claim construction under which a “data file” does not have to be a “file.” (POB, 13.)

Nor do the claims define “user-specific data files.” Rather, the plain language adds a limitation of what must be included in the user-specific data files. PUM’s reference to the specification demonstrates this. PUM states that “column 8 of the ‘040 patent provides that the ‘user-specific data files’ include ‘a set of documents and products associated with the user,’ and ‘monitored user interactions with data.’ ‘040::8:67-9:2.” (POB, 13.) Like the claims, and as PUM states, the specification describes what are “included” in the “files,” not what they are.

PUM further states the specification “only uses the word ‘file’ or ‘files’ in two contexts outside of ‘user-specific data files.’” (*Id.*) Yet, these references—that “browsers contain files” (‘040:17:19-23) and “log files” (‘040:2:33-35)—use the term “files” to mean “files.” So do the

⁵ *Agilent Techs. Inc. v. Affymetrix, Inc.*, 567 F.3d 1366 (Fed. Cir. 2009), cited by PUM, does not support its construction. Indeed, citing *Mangosoft*, the Federal Circuit reaffirmed that all claim terms need be given meaning. *Id.* at 1378. It also reversed the district court’s claim construction

multiple instances in which the phrase “user-specific data files” is used in the specification that PUM ignores.

While for infringement purposes PUM may prefer that a “user-specific data file” need not be “user-specific” or a “file,” it is inappropriate to use claim construction to manufacture infringement arguments. *Vita-Mix Corp. v. Basic Holding, Inc.*, 581 F.3d 1317, 1324 (Fed. Cir. 2009) (“Claims are properly construed without the objective of capturing or excluding the accused device”). Accordingly, PUM’s attempt to gut the meaning of the phrase should be rejected and Google’s construction adopted.⁶

V. PROBABILITY TERMS

<i>Term/Phrase</i>	<i>Google’s Construction</i>	<i>Plaintiff’s Construction</i>
probability (‘040 patent, claims 1, 11,32; ‘276 patent, claim 1, 21, 23)	percentage chance	the degree of likelihood or belief
estimating probability $P(u d)$ that an unseen document d is of interest to the user u (‘040 patent claims 1, 32)	calculating the percentage chance that an unseen document d is of interest to the user u given the information that is known about the unseen document	approximating or roughly calculating the degree of belief or likelihood that an unseen document d is of interest to the user u given the information that is known about the unseen document

because it found that the construction rendered the language in the claim meaningless, just as PUM seeks to do here by requiring that the “user-specific data files” need not be “files.”

⁶ Google’s construction of “monitored user interactions with data” does not merely “reorder the words” as PUM asserts. (POB, 14-15.) It makes clear, as do the claims, that the “monitored user interactions with data” referred to in steps 1(b) and 32(b) are what is obtained from the “monitoring” in steps 1(a) and 32(a) of the ‘040 patent. The applicants also explained during prosecution that it “is updating (step b) with the monitored user interactions (step a)” that is recited in claim 1. (Ex. C - 3/8/04 Remarks, PUM0067706.) PUM’s proposed construction, referring to “the collected information” that has no antecedent basis, appears designed to avoid this clear reference back to steps 1(a) and 32(a).

<i>Term/Phrase</i>	<i>Google's Construction</i>	<i>Plaintiff's Construction</i>
estimating posterior probability $P(u d,q)$ that a document d is of interest to the user u given a query q submitted by the user ('040 patent, claim 11)	calculating the percentage chance of the user u being interested, taking into account what is previously known about that user's interests in general, given new knowledge of the document d the user is considering and a search query q submitted by the user	approximating or roughly calculating the degree of belief or likelihood that a document d is of interest to the user u given the information that is known about the document, and given a query q

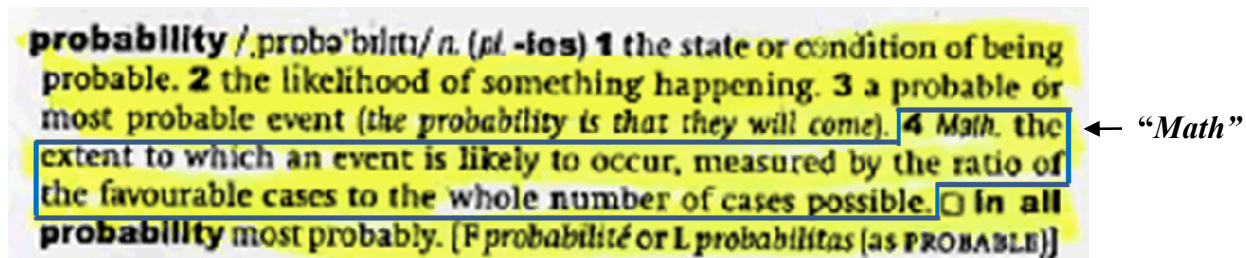
The patent clearly discusses calculating or estimating probabilities in a mathematical context:

"The underlying mathematical framework of the modeling and training algorithms discussed below is based on Bayesian statistics." ('040:8:35-37). [REDACTED]

[REDACTED]

[REDACTED]

Although PUM in its brief cites the second definition in *The Oxford English Reference Dictionary*, it omits the fourth definition from this source, which is in the context of "math":



(Bennett Ex. 11, 1152 (highlighting in Ex. 11, annotations added)) *The Oxford English Reference Dictionary*'s definition in the math context is nearly identical to the definition Google points to in support of its construction. (See GOB, 16, Ex. D)

As the Federal Circuit explained in *Free Motion Fitness Inc. v. Cybex Intern., Inc.*, "in those circumstances where reference to dictionaries is appropriate, the task is to scrutinize the intrinsic evidence in order to determine the most appropriate definition." 423 F.3d 1343, 1348-49 (Fed. Cir. 2005). *Phillips*, 415 F.3d at 1321 ("The problem is that if the district court starts with the broad

dictionary definition in every case and fails to fully appreciate how the specification implicitly limits that definition, the error will systematically cause the construction of the claim to be unduly expansive.”) It is the “math” definition of probability that PUM ignores, not the unduly expansive definitions PUM cites, that should be applied here. Applying a proper definition of “probability” shows Google’s construction is correct, and PUM’s is not.

PUM’s evidence also shows that in the context of the patents, “estimating” of probabilities is properly construed as “calculating.” PUM argues “the specification repeatedly discusses estimating probabilities in a broad context of whether the user would be interested in a document.” (POB, 24.) But like the rest of the specification, PUM’s own cites show this estimation is done using mathematical “calculations.” (See e.g. ‘040:24:59-25:5 (“Calculating an individual score for the document for each element of the user representation”); see also GOB, 16-17; ‘040:5:34-42, ‘040:5:49-52.)

PUM also again points to the *Learning from Data* treatise, which describes “[l]earning [a]s the process of *estimating* the function.” (POB, 20) (emphasis in POB.) But like the patent, this reference uniformly points to mathematical calculations to do this “estimation.” (See e.g., Ex. H, 21 (“Before we look at the learning machine in detail, let us clearly describe the roles of each component in mathematical terms”) (emphasis added), 21-24.) [REDACTED]

[REDACTED]

[REDACTED]

PUM provides no affirmative argument for its construction of “posterior probability,” [REDACTED]

[REDACTED] PUM does not explain how its construction accounts for that difference in meaning. PUM only argues against Google’s construction because Google uses “user’s interests in general” and “given new knowledge of the document the user is considering,” which PUM contends creates ambiguity and confusion. (POB,

25.) But this language is similar to PUM's own "given information that is known" and "that a document d is of interest to the user" language. Thus, PUM's contention that Google's language is unclear rings hollow. In any event, because Google's construction applies the concept of "posterior probability" and PUM's construction does not, Google's construction should be adopted.

VI. USER

<i>Term/Phrase</i>	<i>Google's Construction</i>	<i>Plaintiff's Construction</i>
"user" / "user [u]" (passim)	person operating a computer	a person operating a computer as represented by a tag or identifier

PUM agrees the common meaning of "user" in "lay parlance" is "the person operating the computer." (POB, 11.) Indeed, PUM repeatedly refers to "user" as a "person," not a "representation" of a person:

- "Computers identify users by their electronic tags or identifiers." (POB, 11.)
- "A method was needed that would enable a search engine to provide more relevant information to a user by taking into account information known about the user." (POB, 1.)
- "Generally, the patents-in-suit are directed to methods and devices that personalize, and make more relevant, the search results, product results, and other information (such as advertising) provided or presented to an Internet user." (POB, 2.)

In each of these examples, it is apparent that a "user" is being referred to as a person. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]; *Voice Tech. Group*, 164 F.3d at 615.

PUM, however, seeks to depart from this common meaning of "user" by arguing that the specification reveals a "special definition." (POB, 12.) But the specification reveals no such special meaning. Instead, "user" is uniformly used in the claims and specification as a person who gets personalized information services. ('040:7:4-8, '040:31:58-59, '040:23:55-57; *see also* GOB, 18.)

PUM’s citation to the specification, which states “[t]he user and his or her associated representation are denoted with u, a user query with q, a document with d . . . ,” does not support its “tag or identifier” construction. (‘040:9:10-14). Rather, as Google noted in its Opening Brief, this language also makes clear “the user” is something separate from any “representation” of the user. (GOB, 18 n.5.)

PUM also argues “[t]he dispute regarding this term relates to Defendant’s anticipated non-infringement argument that a cookie . . . is not a user.” (POB, 11.) PUM’s own argument shows there is a difference between a “user” and what “represents a user.” In any event, PUM reveals its goal: for a “cookie” — what PUM calls “a block of data that represents a user” — to be the same thing as a “user.” It is PUM, not Google, that ignores “basic principles of computer science” (*id.*), not to mention common sense, in its argument.⁷

VII. DOCUMENT

<i>Term/Phrase</i>	<i>Google’s Construction</i>	<i>Plaintiff’s Construction</i>
Document (<i>passim</i>)	an electronic file	text or any type of media

PUM concludes Google’s construction tries “to import non-existent limitations into the claims.” (POB, 16.) But no “importation” is needed given the uniform use of “document” in the claims and specification, which PUM ignores completely. (*see* GOB, 19-20.)

As expected, PUM supports its construction by quoting the specification: “[t]he term ‘document’ includes not just text, but any type of media including, but not limited to, hypertext, database, spreadsheet, image, sound, and video.” (‘040:9:14-17). Google’s construction is not at

⁷ Google’s construction of user is not a setup for a non-infringement argument as PUM suggests. Indeed, Google did not initially propose that “user” be construed, as it had no reason to believe a “user” could be viewed as anything other than a person. In any event, what Google does with cookies is not an issue for claim construction. *Vita-Mix*, 581 F.3d at 1324.

odds with this quote. Google does not dispute that the “electronic file” may be comprised of text, or images, or sound. But, as Google pointed out in its Opening Brief, this quote merely demonstrates what a document may include, not define what a document is. Further, the specification shows that a “word” is not the same as a “document” through its disclosure of a “word database” separate from a “document database.” (‘040:17:1-10.)

PUM’s construction does not even comport with its use of “document.” PUM states, “by 1999, there were over a billion web documents available on the Internet.” (POB, 1.) Obviously this refers to a web page, not each word on a page, as PUM’s construction would allow. One of PUM’s cited references similarly distinguishes between words (text) and documents:

Search index -- a large database of document locations based on the words contained in each document; the index facilitates efficient, meaningful searches and is created by a program within the search engine.

(Bennett Ex. 4, at 8) (emphasis added). As PUM’s own brief and extrinsic evidence shows text is not the same thing as a “document,” PUM’s construction to the contrary should be rejected.

VIII. UNSEEN DOCUMENT

<i>Term/Phrase</i>	<i>Google’s Construction</i>	<i>Plaintiff’s Construction</i>
unseen document (‘040 patent, claims 1, 32)	document not previously seen by any user	document not previously seen by the user

To overcome the Examiner’s objections, the applicants amended the claims to require estimating the probability that “unseen documents” are of interest to the user and made clear that an “unseen document,” is not seen by any user. (Ex. C, PUM0067575, 67580-82, and 67596-615; GOB, 22). Google specifically informed PUM that its construction is irreconcilable with the prosecution history. Thus, it is telling that PUM ignores the prosecution history altogether.

Further, while PUM points to the specification’s discussion of applying the User Model to “unseen documents” to determine a user’s interest in a document (POB, 26), neither of PUM’s cited

excerpts suggests that a document is “unseen” by the given user only. Rather, in seeking to distinguish the prior art from the invention, the specification asserts the prior art purportedly could not evaluate interest in a document that was unseen by any users. (See GOB, 21-22.) Here too, PUM ignores the patentees’ statements contradicting its position.

PUM argues that unasserted claim 7, which provides for identifying properties of the document d, refutes Google’s construction because it claims identifying “a number of users who have accessed the document,” “a number of users who have saved the document in a favorite document list,” etc. (POB, 26). This language existed before the applicants amended claim 1 to add the “unseen” document language. The applicants simply failed to adjust this dependant claim accordingly. PUM may not, however, recapture what it gave up through claim amendments and representations to the PTO by pointing out something inconsistent with these amendments and representations in the dependant claims. *Omega Eng’g, Inc. v. Raytek Corp.*, 334 F.3d 1314, 1323 (Fed. Cir. 2003) (“A patentee may not recapture through claim interpretation specific meanings disclaimed during prosecution.”); *Computer Docking Station Corp. v. Dell, Inc.*, 2006 WL 5999613, at *10 (W.D. Wisc. 2006) (disclaimer in prosecution history limited scope of patent, even where it excluded a preferred embodiment in the specification) (citing *Rheox, Inc. v. RMT, Inc.*, 276 F.3d 1319 (Fed. Cir. 2002)). If PUM’s argument shows anything, it is that either “unseen document” or claim 7 is indefinite.

IX. ORDER OF STEPS

<i>Term/Phrase</i>	<i>Google's Construction</i>	<i>Plaintiff's Construction</i>
order of steps ('040 patent, claims 1 and 32, '276 patent, claims 1 and 23)	<p><u>'040 Patent, claims 1 and 32</u>: Steps (a), (b), and (c) must be performed in that order and before steps (e) and (f); step (d) must be performed before steps (e) and (f); and step (e) must be performed before step (f).</p> <p><u>'276 Patent, claim 1</u>: steps (a), (b), and (c) in that order; step (d) before step (e); step (f) must be performed after steps (c) and (e); and step (g) must be performed after step (f).</p> <p><u>276 Patent, claim 23</u>: step (a), (b), (c), (d), (e), and (f) in that order</p>	<p>No construction needed.</p> <p>If the Court is inclined to address the issue, then it should hold that the steps may be performed in a consecutive manner, in an overlapping manner, or a combination of the two, except as set forth [in footnote 4 of Plaintiff's Opening Brief]</p>

PUM does not dispute that method claims must be construed so that the steps are performed in the order recited if, as a matter of logic or grammar, the steps must be performed in the order written. *Altiris Inc. v. Symantec Corp.*, 318 F.3d 1363, 1369 (Fed. Cir. 2003); *Interactive Gift Express, Inc. v. Compuserve, Inc.*, 256 F.3d 1323, 1342 (Fed. Cir. 2001). This is precisely the case here. Indeed, PUM acknowledges that “logic dictates” an order in the asserted claims:

[T]he documents must be analyzed (at least once) to identify properties (step (d) of claims 1 and 32 of the '040 patent) (step 36 of Figure 2)) before those identified properties are applied to the learning machine (step (e) of claims 1 and 32 of the '040 patent (step 38 of Figure 2)). Likewise, for claim 1 of the '276 patent, **logic dictates** that the search query is received (step (d)) before documents are retrieved based on the search query (step (e)), such that documents are retrieved before their identified properties can be applied to the user-specific learning machine to estimate a probability that the retrieved document is of interest to the user (portion of step (f)), and that the probability must be estimated before it can be used in step (g). Steps (d), (e), and (f) of claim 23 of the '276 patent contain similar language.

(POB, 7 n.4) (emphasis added). PUM also acknowledges that “the estimated probability” of step (f) refers to the probability estimated in step (e). (*Id.*) While PUM points to some steps or parts of steps it believes need not be performed in order, even where “most of the steps” of a “method claim refer to the completed results of the prior step,” the steps must be “performed in order.” *E-Pass*

Techs., Inc. v. 3Com Corp., 473 F.3d 1213, 1222 (Fed. Cir. 2007). As that is indisputably the case here, Google's construction should be adopted.⁸

PUM further argues “[d]efendant’s proposed ordering also seemingly requires that all of the steps occur for each iteration of the proposed cycle.” But, it is black letter law, not Google’s construction, that provides “a method claim is directly infringed only if each step of the claimed method is performed.” *Muniauction, Inc. v. Thomson Corp.*, 532 F.3d 1318, 1328 (Fed. Cir. 2008) (citing *BMC Resources, Inc. v. Paymentech, L.P.*, 498 F.3d 1373, 1378-79 (Fed. Cir. 2007)). While it may be the case that in any given system, some steps may not be performed in every “cycle,” in order to practice the claimed method, each step must be performed as a matter of law. In other words, while repetition of steps would not necessarily bring a system out of the claims, a system can only perform the method of the claims if it performs each of the required steps. This is true regardless of any order required by the claims.

X. ANTECEDENT BASIS TERMS

PUM does not dispute that the majority of the “a”/“the” term pairs Google identified must be construed such that where these terms are introduced with “a,” and then later used with “the,” the latter term must be referring to the former term. In fact, other than “a probability $P(u|d)$ ” / “the probability $P(u|d)$ ” and “a document d ” / “the document,” PUM does not express any argument against Google’s constructions. Nor does PUM identify what the antecedent basis would be for these terms if not as Google proposes. Thus, Google’s constructions should be adopted.

⁸ PUM contends the specification contemplates a scenario in which “[t]his sequence of events could happen without another cycle of updating the user-specific data files (step 32 and/or updating the User Model 34), which could occur later in time,” and that other scenarios are plausible as well. (POB, 8 n.6, n.7) But, PUM does not explain how the cited portions of the specification establish that the steps of the method claims need not be performed in their logical order.

Further, PUM admits “the estimated probability of step (f) refers back to the estimated probability $P(u|d)$ of step (e).” (POB, 10). This is precisely what Google’s construction provides: “‘a probability $P(u|d)$ that an unseen document d is of interest to the user u ,’ ‘the probability $P(u|d)$,’ and ‘the estimated probability’ refer to the same probability.” (Appendix B.)

Nevertheless, PUM argues there is not a single probability, but rather multiple probabilities: one for each unseen document. (POB, 10.) This is a straw man argument. Google’s construction does not suggest there must only be a single probability for multiple documents, and PUM does not show how it does.

Further, PUM admits that “step (d) introduces ‘a document d ’ and then refers back to that document d as ‘the document’ within step (d).” (*See* POB, 10.) Yet, PUM argues step (e) introduces “an unseen document d ,” so step (e)’s later reference to “the document” does not necessarily refer to the same “document d .” (*Id.*) This cannot be correct. Initially, there would be no reason to use the “ d ” notation for both “an unseen document d ” and “a document d ” if they were not the same document.⁹

Moreover, if PUM were correct that the “a document d ” of step (d) was a different document than the “an unseen document d ” of step (e), then “the document” in step (d) could also be a different document than “the document” in step (e). That the phrase “the document” could refer to two different documents in the same claim is contrary to black letter law, not to mention common

⁹ To the extent claim 1 uses “a” or “an” twice with respect to “a document d ” and “an unseen document,” this is likely a drafting anomaly resulting from the amendment of this claim. Claim 1(e) originally read: “estimating a probability $P(u|d)$ that the document d is of interest to the user u . . .” (Ex. C, Amendments to the Claims, PUM0067597) (emphasis added). Thus, “the document d ” in claim 1(e) necessarily referred to “a document d ” in claim 1(d). Claim 1(e) was later amended to say: “estimating a probability $P(u|d)$ that ~~the~~ an unseen document d is of interest to the user u . . .” to distinguish the application from the prior art. (*Id.*) (emphasis in original). There is no evidence, however, that the applicants no longer intended for the same document to be referenced.

sense. *Georgia-Pacific Corp. v. U.S. Gypsum Co.*, 195 F.3d 1322, 1331 (Fed. Cir. 1999) (“a claim term cannot be given a different meaning in the various claims of the same patent”). And under PUM’s interpretation, it would be impossible to determine which of the two “document d’s” are referenced in the dependant claims. (See e.g., ‘040: claims 3, 7, 9, 11, 12, 13, 14, 20, 30); *Halliburton Energy Servs., Inc. v. M-I LLC*, 514 F.3d 1244, 1249 (Fed. Cir. 2008) (claim is indefinite where its “meaning is not reasonably ascertainable”). PUM also asserts that “an unseen document d” in step (e) is a “subset” of “a document d” in step (d). But, this does not make sense. (POB, 10.) PUM does not explain what that even means.

Accordingly, Google’s constructions for these terms should be adopted.

XI. PRESENT/PRESENTING

<i>Term/Phrase</i>	<i>Google’s Construction</i>	<i>Plaintiff’s Construction</i>
present or presenting (‘276 patent, claims 1, 21, 23)	display[ing]	to provide or make available

Once again, PUM’s own extrinsic evidence supports Google’s construction. Its proffered definition of “present” from *The American Heritage Dictionary* shows “display” is the proper meaning of present here, in the context of a browser offering something to view:

1. a. To introduce, especially with a formal ceremony . . . **b.** To introduce (a girl) to society with conventional ceremony . . . **2.** To bring before the public . . . **3. a.** To make a gift or award of . . . **b.** To make a gift to; bestow formally . . . **4.** To offer to view; **display**: *present one’s credentials* . . . **5.** to offer for consideration.” See Ex. 12, 1035.

(POB, 28) (citing Bennett Ex. 12, 1035) (emphasis added).

Nevertheless, PUM argues the claim differentiation doctrine supports its construction because claim 24 of the ‘276 patent, which depends on claim 23, recites, “[t]he method of claim 23, wherein **presenting** said selected collected documents to said user comprises **displaying** said selected collected documents to said user . . .”. (POB, 27) (emphasis in POB). But PUM omits the remaining

language “on a personal web page associated with the user,” which adds the “personal web page” limitation not found in claim 23. Thus, there is no claim differentiation issue here. If anything, claim 24 shows that “presenting” is used in the claims in the context of displaying, as Google’s construction provides.

PUM also argues the specification differentiates between “present[ing]” and “display[ing]”, noting that throughout the specification, ““present[ing]” is used to communicate a broad category of acts by which information is provided or made available.” (POB, 27-28). But the contexts in which “present” is used in PUM’s cites, such as “that every network document is *presented* to this filter” or that “information that is *presented* to the user” are not in the context of web browsing. (*Id.* citing ‘276:1:67-2:4, ‘276:7:35-37) (emphasis in POB). As shown in Google’s Opening Brief, in the context of web browsing, the specification makes clear a browser “displays” information to a user. (*See* GOB, 29-30; ‘276:28:52-54, ‘276:28:58-62, ‘276:29:37-39.)

XII. DOCUMENTS [NOT] OF INTEREST TO THE USER

<i>Term/Phrase</i>	<i>Google’s Construction</i>	<i>Plaintiff’s Construction</i>
documents of interest to the user/ documents [that are] not of interest to the user (‘276 patent, claims 1, 5, 14, 21, 23)	Indefinite	text or media for which the user has a positive response” / “text or media for which the user has a negative response or has ignored

Steps 1(b) and 32(b) of the ‘276 patent recite “analyzing the monitored data to determine documents of interest to the user.” [REDACTED]

[REDACTED]

[REDACTED] As determining whether a document is a “document of interest” requires analysis of the subjective intent of the user, this renders the limitation indefinite. (*See* GOB, 24.)

PUM seeks to avoid this result by pointing to examples of “documents of interest to the user” and “not of interest to the user” provided in the specification. (POB, 30.) But, these examples do not provide any objective basis to determine whether a document is “of interest to the user.” Rather, they show why the phrases, and PUM’s constructions thereof, are insolubly ambiguous.

For example, the specification lists “search results that are visited following a search query” as “positive examples” that are “documents of interest to a user.” (‘276:22:16-18.) But, a user could visit a search result and, after reviewing the link, actually determine the document is not of interest.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

The “negative examples” in the specification have the same problem. The specification—like PUM’s proposed construction—points to “search results that are ignored” as documents not of interest to the user. (‘276:22:20-22.) However, [REDACTED] an ignored search result does not necessarily mean the document is “not of interest” to the user. [REDACTED] Nor is failing to click on a link necessarily a “negative response.” For example, the user may be interested in the link, but choose not to click on it because she has recently visited that site.

In sum, “documents [not] of interest to the user,” and PUM’s constructions of those terms, do not provide the boundaries of what is a determination of interest that falls within the claims and what is not. In attempting to design a system that would not meet the element of “analyzing the monitored data to determine documents of interest to the user,” a competitor would not know what

types of data review, such as tracking clicks, meet this element. Thus, the documents of interest or not of interest phrases in the '276 patent are indefinite. *Halliburton*, 514 F.3d at 1249.¹⁰

XIII. USER INTEREST INFORMATION DERIVED FROM THE USER MODEL

<i>Term/Phrase</i>	<i>Google's Construction</i>	<i>Plaintiff's Construction</i>
user interest information derived from the User Model ('040 patent, claim 21)	Indefinite	interests or other information inferred from the User Model

This is PUM's entire argument that its proposed construction is correct:

For example, "user interest information derived from the User Model" is simply "interests or other information inferred from the User Model." The specification discloses: "the User Model represents the user's **information** and product **interests**; all information that is presented to the user has been evaluated by the User Model to be of interest to the user." '040::7: 31-33. The specification further describes: "the User Model reflects the **user's current interests and needs**." '040::8:63-64.

(POB, 29-30) (emphasis in POB). PUM does not show how it gets from "user interest information" to "interests or other information." Nor does PUM indicate what "other information" is. Also, PUM's "inferred from the User Model" suffers the same ambiguity as "derived from a User Model." This phrase does not "clearly distinguish what is claimed from what went before in the art and clearly circumscribe what is foreclosed from future enterprise," and is insolubly ambiguous and indefinite. *Halliburton*, 514 F.3d at 1249 (quoting *United Carbon Co. v. Binney & Smith Co.*, 317 U.S. 228, 236 (1942)).

CONCLUSION

For these reasons, this Court should adopt Google's constructions of the disputed terms.

¹⁰ PUM argues indefiniteness is not an issue for claim construction. Oddly, PUM insisted "user interest information derived from the User Model" be construed specifically because Google asserted it was indefinite. In any event, courts can and commonly do decide indefiniteness during claim construction. *Fisher-Price, Inc. v. Graco Children's Products, Inc.*, 154 Fed. Appx. 903, 905 (Fed. Cir. 2005) (reviewing finding of indefiniteness during claim construction).

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